

THE SOUTHEASTERN DISTRICT MAINLAND

SALMON FISHERY OF AREA M, 1991

REPORT TO THE ALASKA BOARD OF FISHERIES

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## **ABSTRACT**

The Southeastern District Mainland fishery is located in the Stepovak, Beaver and Balboa Bays in Area "M" of the Alaska Peninsula Management Area. Under a management plan established by the Board of Fisheries in 1985, the fishery is allocated 6.0% of the total Chignik bound sockeye harvest through July 25. After July 25, the area is managed on local stocks. Over the past 20 years, about 80% of the sockeye harvest has been by set gill net gear and 20% by purse seine gear. The average harvest of sockeye salmon since 1985 through July 25 is 89,668 salmon. Since 1985, the Southeastern District Mainland fishery has harvested an average of 5.6% of the total Chignik bound run through July 25.

In 1991, the Southeastern District Mainland harvest of sockeye salmon through July 25 was 289,727 salmon. The Chignik bound sockeye salmon contribution of the harvest (152,714 salmon) accounted for 6.2% of the total Chignik bound harvest through July 25. About 59 Area "M" set gill net permit holders participated in the Southeastern District Mainland fishery in 1991.

In 1991, Orzinski Lake had an escapement of 40,000 sockeye salmon and a 98,834 sockeye harvest attributed to the system.

**KEY WORDS:** Southeastern District Mainland, Orzinski Lake, sockeye salmon

## INTRODUCTION

The Southeastern District Mainland (SEDM) fishery of Area "M" is located on the South Alaska Peninsula (Figure 1). Included in this fishery are the Beaver Bay, Balboa Bay, Southwest Stepovak, Northwest Stepovak, East Stepovak, and Stepovak Flats Sections (Figure 2). Through the present Alaska Board of Fisheries management plan (ADF&G, 1990), the Northwest Stepovak and Stepovak Flats Sections are managed on a local stock basis throughout the season, and the remainder of the area is managed on an allocation based on the strength of the Chignik sockeye run. After July 25, the entire area is managed on a local stock basis.

Set gill net gear has traditionally harvested about 80% of the total sockeye salmon harvest in the area, with seine gear harvesting the remainder (Table 1).

Fishing effort during June and most of July primarily targets Chignik destined sockeye salmon, and to a lesser degree the Orzinski (Orzenoi) Lake sockeye run in the Northwest Stepovak Section and early July chum salmon in the Stepovak Flats Section. During late July through mid August, local pink and chum salmon runs are peaking. The fishery is usually closed during mid and late August to achieve desired escapement goals and is opened again in September to harvest coho salmon. Sockeye salmon are migrating through the area during the entire season.

Historically, the SEDM fishery has produced minor harvests (Table 2). From 1974 through 1977, the fishery was open on a day per day basis with Chignik Lagoon. During some years, such as 1977, only short fishing periods were required to harvest large runs in Chignik Lagoon while daily interception rates in the SEDM fishery were low. This resulted in few salmon being caught in the SEDM area.

For the 1978 season, the Board of Fisheries allowed three fishing days per week in the SEDM fishery through July 10 and made set gill net gear the only legal gear through July 10. Interception rates were low despite strong Chignik runs, resulting in a SEDM harvest of only 22,029 sockeye salmon. From 1973 through 1978, an average of 18 gillnetters participated in this fishery through July 25.

During the winter of 1978-79, the Board of Fisheries increased fishing time to five days per week but specified that not more than 60,000 estimated Chignik sockeye could be harvested through July 10. However, the fishery could be closed if it became apparent that a closure was needed to assure Chignik escapement requirements. Also, if the Chignik Area catch exceeded 1,000,000 sockeye salmon before July 10, the SEDM fishery could continue beyond the 60,000 ceiling. This management plan remained in effect until 1985.

From 1979 through 1982, SEDM fishermen harvested an average of over 76,000 (6.4% of total) Chignik bound sockeye salmon, even though numerous fishery closures were needed because of weak Chignik Area sockeye escapements. From 1978 through 1982, set gill net gear increased through July 25 to an average of 30 permit holders.

The 1983 season estimated interception of Chignik destined sockeye salmon totaled 217,000 fish. Most (76%) of the sockeye salmon were harvested between July 10 and August 10.

In 1984, set gill net gear effort increased to 54 permits (Figure 3), of which five were operated part time by purse seine permit holders. Due to an exceptionally large early Chignik run, a large number of fish available in the SEDM area, and a large amount of gear, only 6 days were required to harvest an estimated 60,000 Chignik destined sockeye salmon. The fishery was closed for only 3 days before the Chignik catch reached 1,000,000. The SEDM fishery was re-opened on June 14 using the fishing periods listed in the regulation book (6 AM Monday through 6 PM Friday).

While it was anticipated that there would be a strong 1984 second Chignik sockeye salmon run, it did not materialize. The Chignik second run escapement goal was reached only after considerable curtailment of the SEDM, Chignik, and Cape Igvak (Kodiak Area) fisheries during mid-July. The 1984 SEDM interception of Chignik destined sockeye through July 25 was 423,068 salmon.

Aside from an increase in effort, another reason for the large sockeye catch in the SEDM fishery in 1983, 1984, 1986, 1990, and 1991 may have been a change in the proportion of the Chignik run migrating through this area rather than coming from the east (Kodiak).

The present management plan was instituted by the Board of Fisheries beginning with the 1985 season (Figure 4). The plan states that in years when a harvestable surplus beyond the escapement goals for the first and second runs of Chignik River system sockeye salmon is expected to be more than 600,000, and the department determines that the runs are as strong as expected, the department shall manage the fishery so that the number of sockeye salmon taken in the SEDM fishery (exclusive of the Northwest Stepovak Section) is as near as possible to 6.0% of the total Chignik bound sockeye salmon catch.

In years when a harvestable surplus for the first and second runs of Chignik River system sockeye salmon is expected to be less than 600,000, no commercial salmon fishery targeting Chignik sockeye salmon is allowed in the SEDM fishery until a harvest of 300,000 sockeye salmon is achieved in the Chignik area. After July 9, fishing in the SEDM may occur provided at least 300,000 sockeye salmon have been harvested in the Chignik Area, escapement goals are being met, the Chignik Area catch is anticipated to total at

least 600,000, and the SEDM fishery catch is, as near as possible, 6.0% of the total Chignik bound sockeye salmon catch.

There are two distinct sockeye salmon runs into the Chignik system, which are the Black Lake run and Chignik Lake run. The two runs overlap in run timing in the SEDM and Igvak fishery areas (based on previous tagging studies) from about June 26 through July 9. During the overlap period, identifying first or second run fish is impossible in areas outside the immediate area of Chignik Lagoon. The Cape Igvak and SEDM fisheries are usually closed during this period to prevent the potential overharvest of the second run (Chignik Lake) fish. However, fishing may continue at the terminal area in Chignik, where stock assessment is possible.

The total Chignik destined sockeye catch is estimated by adding 80% of the SEDM catch (excluding Northwest Stepovak Section) to 80% of the Cape Igvak catch plus the entire Chignik Area sockeye catch. The 80% interception allocation rates are based on tagging studies conducted in Stepovak Bay and Cape Igvak.

Table 2 lists the harvests in the Cape Igvak, SEDM, and Chignik Management Areas. The 1973-1991 SEDM catch of Chignik destined sockeye salmon through July 25 averaged 93,933 fish (5.9% of the total Chignik bound harvest). The 1991 harvest was 152,714 sockeye salmon (6.2% of the total Chignik bound harvest, Table 1). The 1988 and 1989 percentages were low because the pre-July 26 Chignik Area sockeye harvest marginally reached or fell below 600,000 salmon. The 1990 percentage exceeded the 6.0% Chignik sockeye allocation. Reasons for this included: 1) large catches of sockeye during the July 18-19 opening; 2) the lower than anticipated harvest at Cape Igvak (only 7.4%); and 3) the difficulty of estimating the catching power of the fishing fleet, especially purse seine gear (about 50% of the purse seine vessels have chilled water systems and often do not deliver fish until 48 hours after a fishing period opening). Set gill net gear level through July 25 from 1984 through 1991 has averaged about 48 permits.

## **LOCAL STOCKS**

### *Northwest Stepovak Section*

The Northwest Stepovak and Stepovak Flats Sections are managed on a local stock basis. For sockeye salmon, the Northwest Stepovak Section is managed on the basis of the Orzinski Lake sockeye salmon through July 25. The Northwest Stepovak Section also has local pink and chum salmon stocks. Portions of the section are managed on these stocks when conservation concerns or salmon in excess to escapement requirements are present.

The sockeye escapement goal for Orzinski Lake is 20,000 salmon as estimated from the production potential of the lake. In 1990, the estimated total sockeye escapement was 15,000 salmon, while in 1991, total escapement was estimated at 40,000 (Table 3).

Orzinski Lake sockeye escapement was counted through a weir from 1935 to 1941, and in 1990 and 1991. Sockeye salmon usually enter the lake about June 17, with July 17 the average date of 50% cumulative sockeye escapement. By August 7, about 99% of the annual escapement has occurred.

Based on historical aerial surveys and weir counts, sockeye escapement requirements for Orzinski Lake by time periods were developed for the 1991 season (Table 4).

During most seasons, through June 30 the Northwest Stepovak Section was open on a day per day basis with the rest of the SEDM fishery. Sockeye salmon caught within the Northwest Stepovak Section are allocated 100% to the Orzinski Lake run. From July 1 through July 25, fishing time in the Northwest Stepovak Section is based on the strength of the sockeye salmon run destined to Orzinski Lake. After July 25, fishing time is based on local sockeye, pink, and chum stocks.

#### *Stepovak Flats Section*

The Stepovak Flats Section is managed on the basis of the chum runs of the numerous rivers that discharge into Stepovak Flats. Through July 11, this section is open on a day per day basis with the remainder of the SEDM fishery. Sockeye salmon harvested in this section are assigned as 80% Chignik bound fish, and are included as part of the 6.0% allocation of the SEDM fishery. After about July 10, the Stepovak Flats Section is

managed on the chum salmon run into the rivers there. The entire section is closed to fishing by regulation from July 29 through September 30 to protect schooling chum salmon.

#### **1991 SEASON SUMMARY**

The following is the 1991 SEDM season summary. Harvest numbers in the text were the preliminary numbers received from tender reports used in the management of the fishery. Those found in tables and figures are updated figures from post-season fish ticket harvest data.



The preseason forecast for the total Chignik bound harvest for 1991 was 2,360,000 sockeye for the first (Black Lake) run and 890,000 for the second (Chignik Lake) run. This forecast indicated that a fishery would occur in the SEDM fishery targeting Chignik bound sockeye salmon because a harvest of at least 600,000 would occur in the Chignik Management Area.

The Chignik Area sockeye fishery started on June 11, when the escapement past the weir had reached 116,000 sockeye salmon, which was within the desired range for that date. Following the announcement of this first Chignik opening, the Kodiak office announced a 48-hour fishery in the Cape Igvak section beginning at 12:01 AM on June 12. An announcement then followed from the Sand Point office for an opening in the SEDM Area for a 36-hour period beginning at 10 PM on June 13.

Catches and escapement were larger than expected in the Chignik Area. With a total sockeye catch of over 141,000 and total sockeye escapement of 131,000 by June 13, the Chignik Management Area fishing time was extended 24 hours. SEDM fishermen harvested about 9,600 Chignik bound sockeye (5.9% of the total Chignik harvest) during their fishing period. With the large catch and extended fishing time at Chignik, both the Cape Igvak and the SEDM fishery were extended an additional 48 hours.

The first run remained strong at Chignik, and the fishery at Chignik was extended until June 19. Through June 17, the Chignik Area sockeye harvest was 441,000 salmon, and the area remained open to commercial fishing. With the SEDM sockeye harvest at 55,654 (8.4%) of the total Chignik bound harvest, and the Chignik Area still open to fishing, the SEDM fishery was reopened for a 40-hour period, beginning on June 20 at 6 AM. SEDM fishermen harvested about 40,800 Chignik bound sockeye salmon (51,000 total sockeye salmon) during this opening.

As the June 25 - July 9 overlap period approached, a 24-hour fishery beginning at 1 PM on June 23 was announced at Chignik. In anticipation of a substantial Chignik Area harvest, the SEDM fishery notice time was reduced from 24 to 3 hours as a provision to allow SEDM fishermen fishing time before the beginning of the June 25 overlap period.

A statewide drop in salmon fishing prices and striking fishermen in other areas resulted in the Chignik seiners striking on June 23. The Chignik Seiners Association boycotted processors who would not meet their sockeye salmon delivery price of \$0.80 per pound. This resulted in a daily processing capacity of 340,000 pounds. The Chignik Seiners Association co-oped the fishery (restricted to the lagoon) allowing rotation of 10 vessels per shift until the daily processing capacity quota was met. The co-op fishery continued until July 5, when all processors agreed upon \$0.85 cents per pound for sockeye salmon. During the boycott, the Chignik Seiners

Association blocked the Chignik River with doubled seines stretched from bank to bank to prevent over-escapement.

In accordance with Alaska Statute 5 AAC 39.200 (b) (ADF&G, 1990), overescapement counted past the Chignik weir during the strike was counted as salmon harvested by Chignik Area fishermen. Therefore, the SEDM opened for 16 hours on June 25. SEDM fishermen harvested a total of 21,263 sockeye, of which 17,010 were Chignik bound sockeye salmon. The cumulative SEDM harvest of Chignik bound harvest was 117,000 salmon, or 9.3% of the total Chignik bound harvest of 1,268,000 salmon (without over escapement added) going into the overlap period (June 26 to July 9).

During the overlap period, the Orzenski Lake run in the Northwest Stepovak Section was much stronger than expected (Table 5). Sockeye salmon began passing the weir on June 19. By July 4, the sockeye escapement into Orzenski Lake was about 9,500, with several thousand more salmon at the mouth of the river. The escapement goal for Orzenski through July 16 was 10,000, and a 17 hour opening was announced for July 6 in the Northwest Stepovak Section to harvest the surplus sockeye salmon at Orzenski. This opening was concurrent with the set gill net opening in the Shumagin Islands Section in an effort to disperse fishing gear in the Southeastern District.

By July 7, sockeye escapement into Orzenski Lake totalled 19,900 salmon, far ahead of the August 7 escapement goal of 20,000, and more salmon were showing at the mouth of the river. The fishery was reopened July 8 from 5 AM to 10 PM in the Northwest Stepovak Section, again concurrently with the set gill net opening in the Shumagin Islands Section to disperse fishing effort. Also, as the escapement goal for Orzenski were assured, the closed water area at the mouth of the river was reduced from 1,000 to 500 yds.

By July 8, Chignik Area fishermen had harvested a total of 1,500,000 sockeye salmon, which included excess escapement during the June 23 - July 5 strike. The SEDM fishery harvest of total Chignik bound sockeye was 117,000 fish or 5.5% of the total. With the Chignik Area harvest over 600,000 sockeye salmon, and the preseason forecast and present run strength indicating a harvestable surplus, the SEDM fishermen were put on 4 hours notice on July 8 in anticipation of an opening on July 10 (usually the first day of potential fishing in the SEDM fishery after the overlap period, June 26 to July 9).

The SEDM opened at 8:30 PM on July 9 for a 25.5 hour fishing period, and harvested 22,642 sockeye salmon (18,114 Chignik bound). The Northwest Stepovak Section was already opened and scheduled to close at the same time. However, as the escapement at Orzenski reached 20,800 fish by July 10, the Northwest Stepovak Section fishery was extended an additional 48 hours through July 12, resulting in a harvest of 31,000 sockeye salmon.

The July 9 - 10 fishing period was the final fishing period targeting Chignik bound sockeye salmon through the end of the management plan date on July 25. An additional 1,698 sockeye salmon (958 Chignik bound fish) were harvested incidentally in a July 15 - 16 opening targeting local chum salmon in the Stepovak Flats Section. This was also the only opening that the seine fleet harvested Chignik bound sockeye salmon in the SEDM during the Southeast District Management Plan time period.

At Orzinski Lake, escapement had reached 28,188 sockeye salmon by July 12. The Northwest Stepovak Section was open from July 12 - 16 for 54.5 hours, resulting in a harvest of about 22,000 sockeye salmon. The final opening during the Southeast District Management Plan period for the Northwest Stepovak Section occurred from July 21 - 23, resulting in a harvest of about 14,000 sockeye salmon. The weir was removed on July 19 with the sockeye escapement at 35,219 salmon. Subsequent aerial surveys added to the weir counts showed a total escapement into Orzinski Lake of about 40,000 sockeye salmon.

The total sockeye harvest through July 25 in the SEDM fishery was 289,727. The breakdown of the harvest is as follows:

Northwest Stepovak Section:	98,834 (100% local)
Chignik bound sockeye:	152,714 (6.2% of total Chignik Harvest)
Remainder of Southeast District Mainland fishery:	38,179
Total SEDM Fishery Sockeye Harvest thru July 25	: 289,727

Since the current management plan has been in effect, the SEDM catch of Chignik destined sockeye salmon has ranged from 0.9% to 9.3% and averaged 5.6% (Table 2). The 1991 SEDM catch (excluding the Northwest Stepovak Section) through July 25 accounted for 6.2% of the total Chignik bound harvest through July 25.

The season total harvest in the entire SEDM fishery in 1991 was 2,761,957 salmon, including 1,063 chinook, 396,655 sockeye, 49,873 coho, 2,119,216 pink and 195,150 chum salmon.

## LITERATURE CITED

ADF&G (Alaska Department of Fish and Game). 1990. 1990-1991 Bristol Bay and Westward Alaska Commercial Fishing Regulations, Salmon and Miscellaneous Finfish. Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau.

Table 1. Percent of sockeye caught by gear type and season total sockeye salmon catch in the Southeastern District Mainland fishery<sup>a</sup>, 1972-91.

Year	Set Gillnet	Purse Seine	Total Sockeye Catch
1972	90%	10%	22,190
1973	97%	3%	47,932
1974	74%	26%	89,419
1975	57%	43%	3,156
1976	90%	10%	59,915
1977	73%	27%	48,463
1978	87%	13%	34,761
1979	71%	29%	126,066
1980	89%	11%	130,322
1981	87%	13%	259,409
1982	93%	7%	118,032
1983	72%	28%	394,224
1984	91%	9%	680,645
1985	87%	13%	137,891
1986	91%	9%	245,511
1987	97%	3%	299,463
1988	79%	21%	158,374
1989	54%	46%	282,294
1990	57%	43%	277,460
1991	85%	15%	396,655
10 year average ( '82-'91)	84%	16%	299,055
20 year average ( '72-'91)	81%	19%	190,609

<sup>a</sup> Includes Beaver Bay, Balboa Bay, Southwest Stepovak, Northwest Stepovak, Stepovak Flats, and East Stepovak Sections of the Southeastern District.

Table 2. Harvest of Chignik bound sockeye salmon in the Chignik, Cape Igvak, and Balboa-Stepovak areas<sup>a</sup>, 1964-1991.

Year	<u>Chignik Area</u>		<u>Cape Igvak</u>		<u>Southeast District Mainland</u>		Total
	Catch	Percent	Catch	Percent	Catch	Percent	
1964 <sup>b</sup>	556,890	90.6	14,980	2.4	43,021	7.0	614,890
1965	599,553	89.9	11,021	1.7	56,020	8.4	666,594
1966	219,794	88.0	18,003	7.2	12,011	4.8	249,808
1967	462,000	91.5	23,014	4.6	20,021	4.0	505,034
1968	977,382	82.5	135,951	11.5	70,959	6.0	1,184,292
1969	394,135	79.0	97,982	19.6	7,013	1.4	499,130
1970	1,325,883	72.8	427,339	23.5	68,181	3.7	1,821,403
1971	1,016,136	77.0	253,044	19.2	50,952	3.9	1,320,132
1972	378,669	86.3	42,012	9.6	17,999	4.1	438,680
1973 <sup>c</sup>	769,256	89.0	57,098	6.6	38,102	4.4	864,456
1974	530,278	74.1	120,602	16.9	64,563	9.0	715,443
1975	115,984	81.8	23,635	16.7	2,205	1.6	141,824
1976	792,024	83.1	117,926	12.4	43,356	4.6	953,306
1977	1,547,285	90.6	128,852	7.6	31,498	1.8	1,707,635
1978 <sup>d,e</sup>	1,454,389	85.5	225,078	13.2	22,029	1.3	1,701,496
1979 <sup>f</sup>	794,504	92.0	13,950	1.6	55,344	6.4	863,798
1980	670,001	91.2	32	0.0	64,862	8.8	734,895
1981	1,606,290	79.9	282,342	14.0	121,870	6.1	2,010,502
1982	1,250,939	84.5	166,219	11.2	62,767	4.2	1,479,925
1983	1,450,832	72.6	320,932	16.1	227,392	11.4	1,999,156
1984	2,474,405	73.9	449,360	13.4	423,068	12.6	3,346,833
1985 <sup>g</sup>	696,169	79.9	123,627	14.2	51,421	5.9	871,217
1986	1,456,729	82.6	188,017	10.7	118,006	6.7	1,762,752
1987	1,659,915	78.0	320,813	15.1	146,886	6.9	2,127,614
1988	678,912	95.0	10,520	1.5	25,565	3.6	714,997
1989	502,477	99.1	0	0.0	4,485	0.9	506,962
1990	1,196,599	84.9	83,967	6.0	128,601	9.1	1,409,167
1991 <sup>h</sup>	1,970,614	80.6	324,329	13.3	152,714	6.2	2,447,657

<sup>a</sup> The Balboa-Stepovak fishery includes Beaver Bay (Southeastern District Mainland Fishery). The Cape Igvak and Balboa-Stepovak numbers represent 80% of the total sockeye catches for those areas as it is estimated that roughly 80% of the sockeye caught in the Cape Igvak section and Balboa-Stepovak are destined for Chignik.

<sup>b</sup> The data from 1964 - 1972 are based on total yearly catches. Prior to 1973, Cape Igvak and Balboa-Stepovak fisheries were set by regulation to weekly fishing periods, usually 5 days per week. Time modifications were implemented when poor escapements occurred at Chignik.

-Continued-

Table 2. (page 2 of 2)

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- <sup>c</sup> During 1973 through 1977 all three fisheries were managed on a day-by-day basis.
- <sup>d</sup> From 1978 through 1990, the Cape Igvak Fishery Management Plan allocated 15 percent of the total sockeye catch destined for Chignik.
- <sup>e</sup> During 1978, seining prior to July 11 was disallowed in Beaver, Balboa, and Stepovak Bays. The set gillnet fishery was allowed to fish 3 days per week through July 10 after which the fishery was managed on the basis of local stocks.
- <sup>f</sup> During 1979-1984 and prior to July 11, fishing was allowed 5 days per week at Balboa-Stepovak (including Beaver Bay) with a estimated ceiling of 60,000 sockeye destined for Chignik. If the Chignik Area sockeye catch was 1,000,000 or more before July 11, the 60,000 ceiling was to be dropped.
- <sup>g</sup> Beginning in 1985, Balboa-Stepovak was placed on an allocation of 6.2 percent of the total estimated Chignik sockeye catch through July 25. After July 25, Balboa-Stepovak is managed on a local stock basis. The allocation changed back to an even 6 percent beginning in 1988. Seining is still not allowed prior to July 11.
- <sup>h</sup> Includes overescapement of 278,305 sockeye counted past the weir during the Chignik Area seiners' boycott (Jun 23 - Jul 4).

Table 3. Estimated orzinski sockeye salmon runs and total Southeastern District Mainland sockeye salmon catch, in numbers of fish, 1979-91.

Year	Escapement <sup>a</sup>	Orzinski and American Bay Catch	Balance of Suzy Cr. Dent Point Catch	Total Suzy Cr. Dent Pt. Catch	Total Orzinski Run	Total Southeast Mainland Catch
1935 <sup>b</sup>	28,474					
1936 <sup>b</sup>	31,720					
1937 <sup>b</sup>	15,393					
1938 <sup>b</sup>	8,675					
1939 <sup>bc</sup>	10,414					
1940 <sup>b</sup>	16,414					
1941 <sup>b</sup>	8,241					
1981	18,000	19,400	32,600	52,000	70,000	262,200
1982	9,000	6,100	3,400	9,500	18,500	118,000
1983	21,300	10,800	11,600	22,400	43,700	396,500
1984	18,600	18,600	52,300	70,900	89,500	633,300
1985	14,000	5,100	16,300	21,400	35,400	137,900
1986	10,300	12,500	49,200	61,700	72,000	245,500
1987	11,400	14,500	48,700	63,200	74,600	301,000
1988	19,300	14,500	45,000	59,500	78,800	158,400
1989	16,700	18,500	87,600	106,100	122,800	282,300
1990 <sup>b</sup>	15,000	1,257	4,796	6,053	21,053	277,460
1991 <sup>d</sup>	40,000	50,496	59,991	110,487	150,487	396,655

<sup>a</sup>Escapements are indexed total escapements, and are likely lower than actual total.

<sup>b</sup>Weir was used to count escapement.

<sup>c</sup>In 1938, adverse weather conditions may have caused only part of the run to be counted.

<sup>d</sup>Escapement count is the sum of weir counts plus aerial surveys conducted after the weir was removed.



**Table 4. Sockeye salmon escapement requirements for Orzinski Lake.**

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<b>Cumulative Escapement Goal Date</b>	<b>(Numbers of Fish)</b>
<hr/>	
<b>June 15</b>	<b>0</b>
<b>July 1</b>	<b>2,000</b>
<b>July 9</b>	<b>5,000</b>
<b>July 16</b>	<b>10,000</b>
<b>July 23</b>	<b>15,000</b>
<b>August 7</b>	<b>20,000</b>
<hr/>	
<b>Season Total</b>	<b>20,000</b>

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Table 5. Sockeye salmon daily and cumulative escapement counts through the Orzinski Lake weir, 1991.

Date	Daily			Cumulative		
	Adults	Jack	Total	Adults	Jack	Total
June 14	0	0	0	0	0	0
15	0	0	0	0	0	0
16	0	0	0	0	0	0
17	0	0	0	0	0	0
18	0	0	0	0	0	0
19	0	1	1	0	1	1
20	1	0	1	1	1	2
21	1	1	2	2	2	4
22	0	1	1	2	3	5
23	10	4	14	12	7	19
24	0	0	0	12	7	19
25	1	1	2	13	8	21
26	11	5	16	24	13	37
27	276	72	348	300	85	385
28	1	2	3	301	87	388
29	1,772	67	1,839	2,073	154	2,227
30	602	36	638	2,675	190	2,865
July 1	1,034	33	1,067	3,709	223	3,932
2	359	8	367	4,068	231	4,299
3	1,070	10	1,080	5,138	241	5,379
4	9,802	50	9,852	14,940	291	15,231
5	2,818	10	2,828	17,758	301	18,059
6	1,832	13	1,845	19,590	314	19,904
7	948	0	948	20,538	314	20,852
8	378	2	380	20,916	316	21,232
9	1,274	1	1,275	22,190	317	22,507
10	1,348	11	1,359	23,538	328	23,866
11	1,490	21	1,511	25,028	349	25,377
12	2,788	23	2,811	27,816	372	28,188
13	2,049	26	2,075	29,865	398	30,263
14	454	7	461	30,319	405	30,724
15	767	19	786	31,086	424	31,510
16	453	5	458	31,539	429	31,968
17	1,162	23	1,185	32,701	452	33,153
18	1,113	15	1,128	33,814	467	34,281
19	910	28	938	34,724	495	35,219
Post July 19*	4,715	66	4,781	39,439	561	40,000

\* July 19 was the last day of escapement counting through the Orzinski Lake weir. Post July 19 counts are estimated from aerial surveys and escapement performance during the last days the weir was in operation.

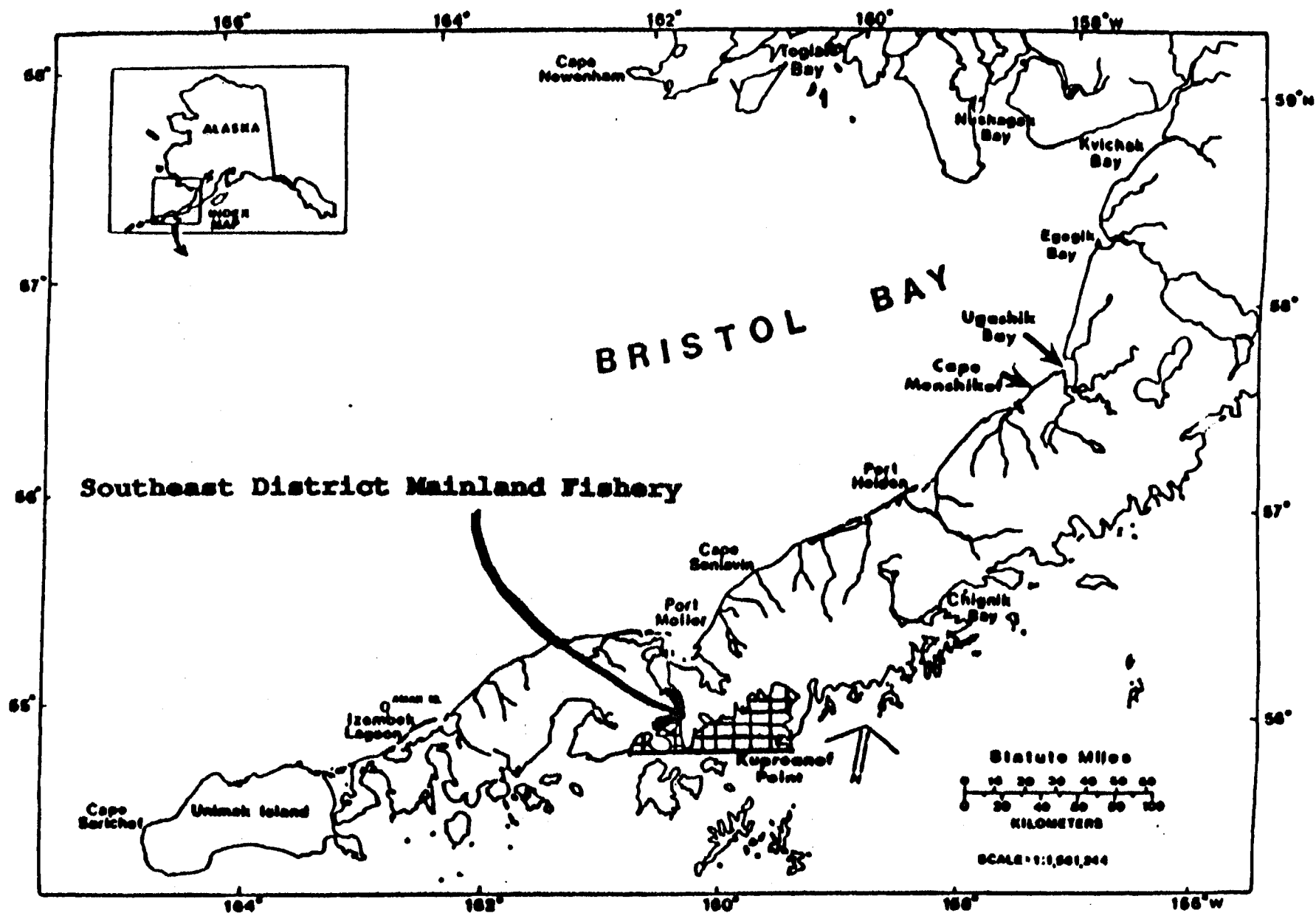


Figure 1. Alaska Peninsula from Kvichak Bay to Unimak Island.

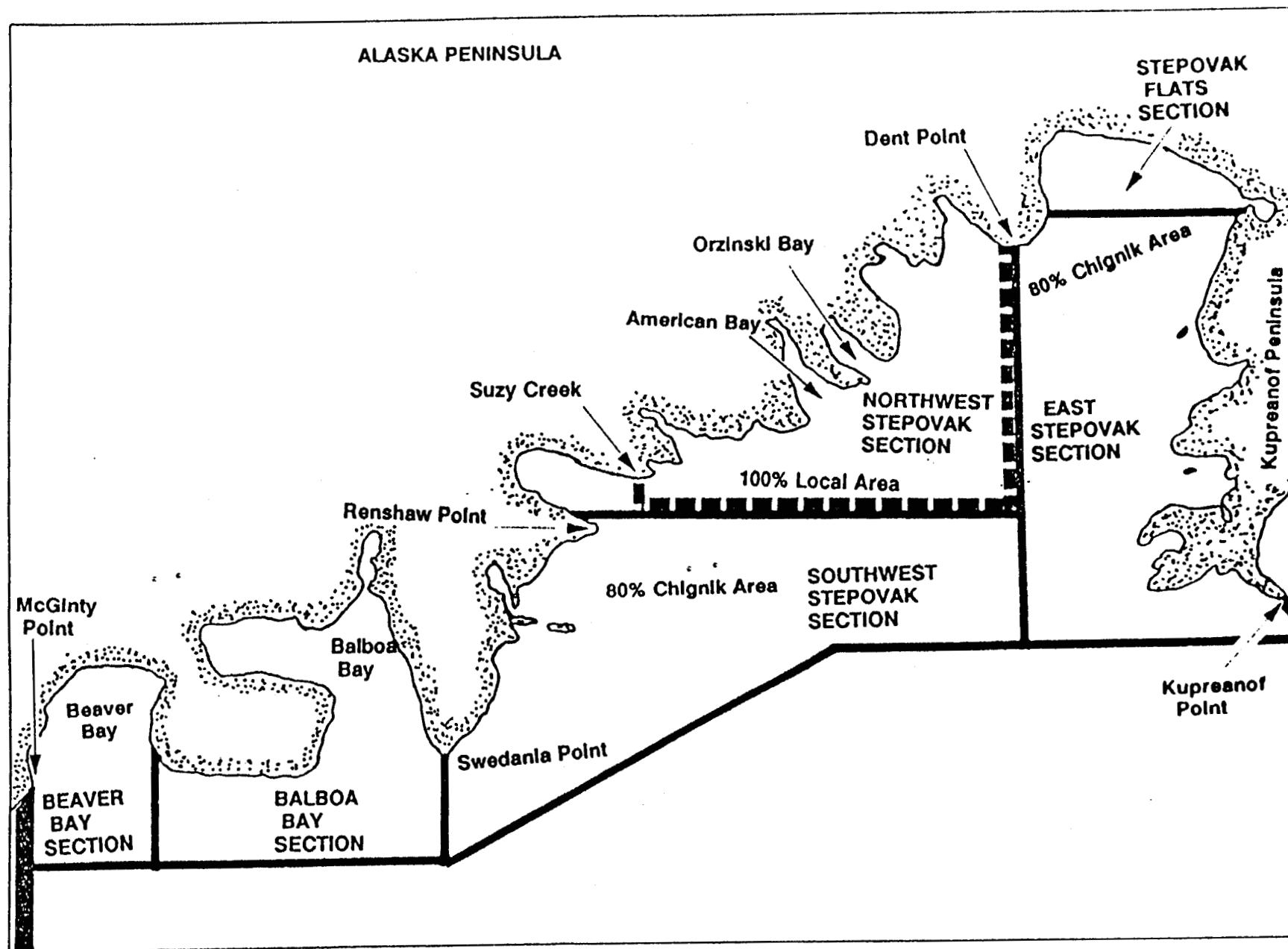


Figure 2. Map of the Southeastern District Mainland fishery from Kupreanof Point to McGinty Point with the salmon sections shown. Sockeye salmon harvested in the Northwest Steповak Section are counted as 100 percent local stocks. Through July 25, 80 percent of the sockeye salmon caught in the remainder of the sections are counted as Chignik bound fish.

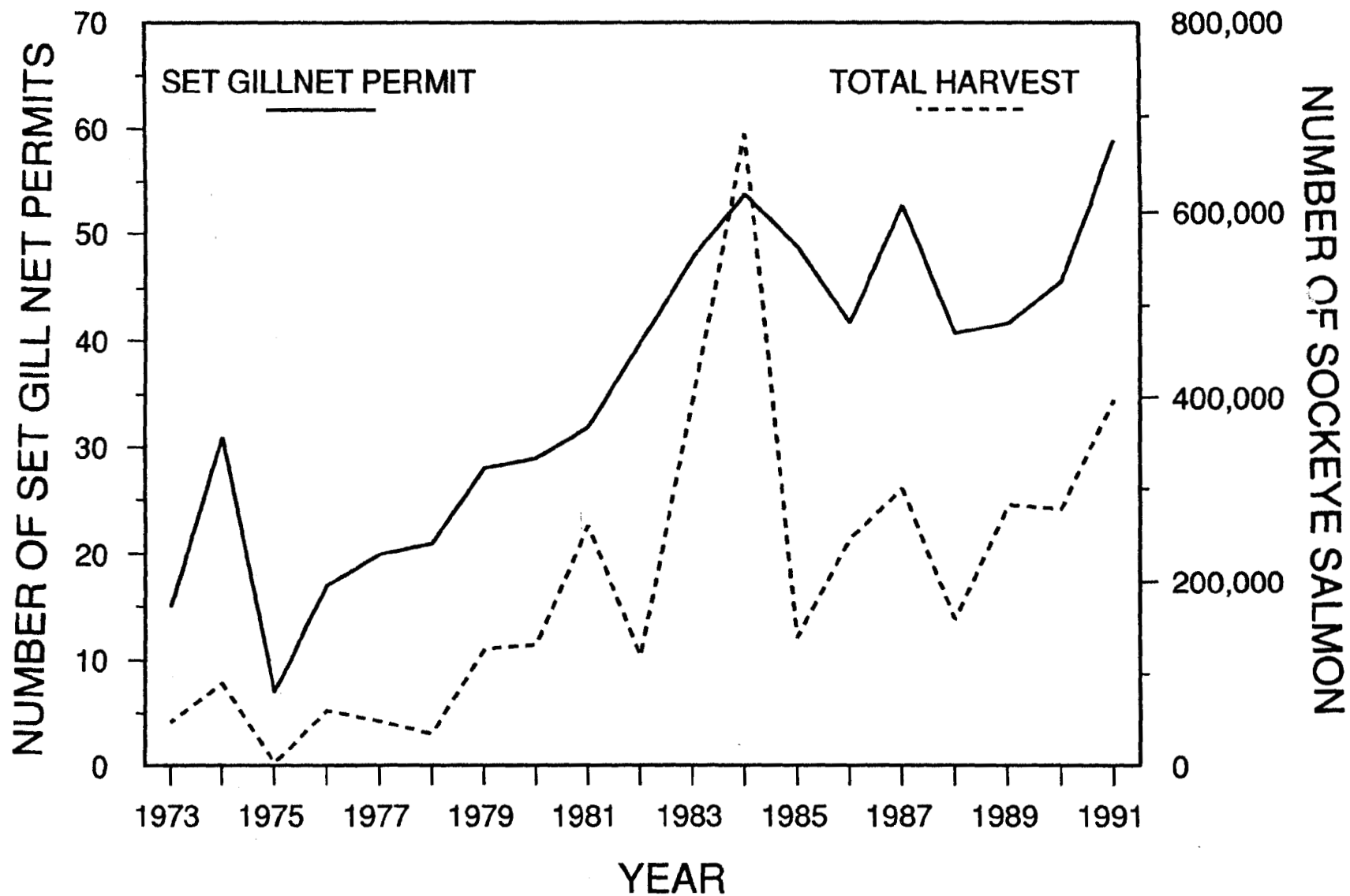
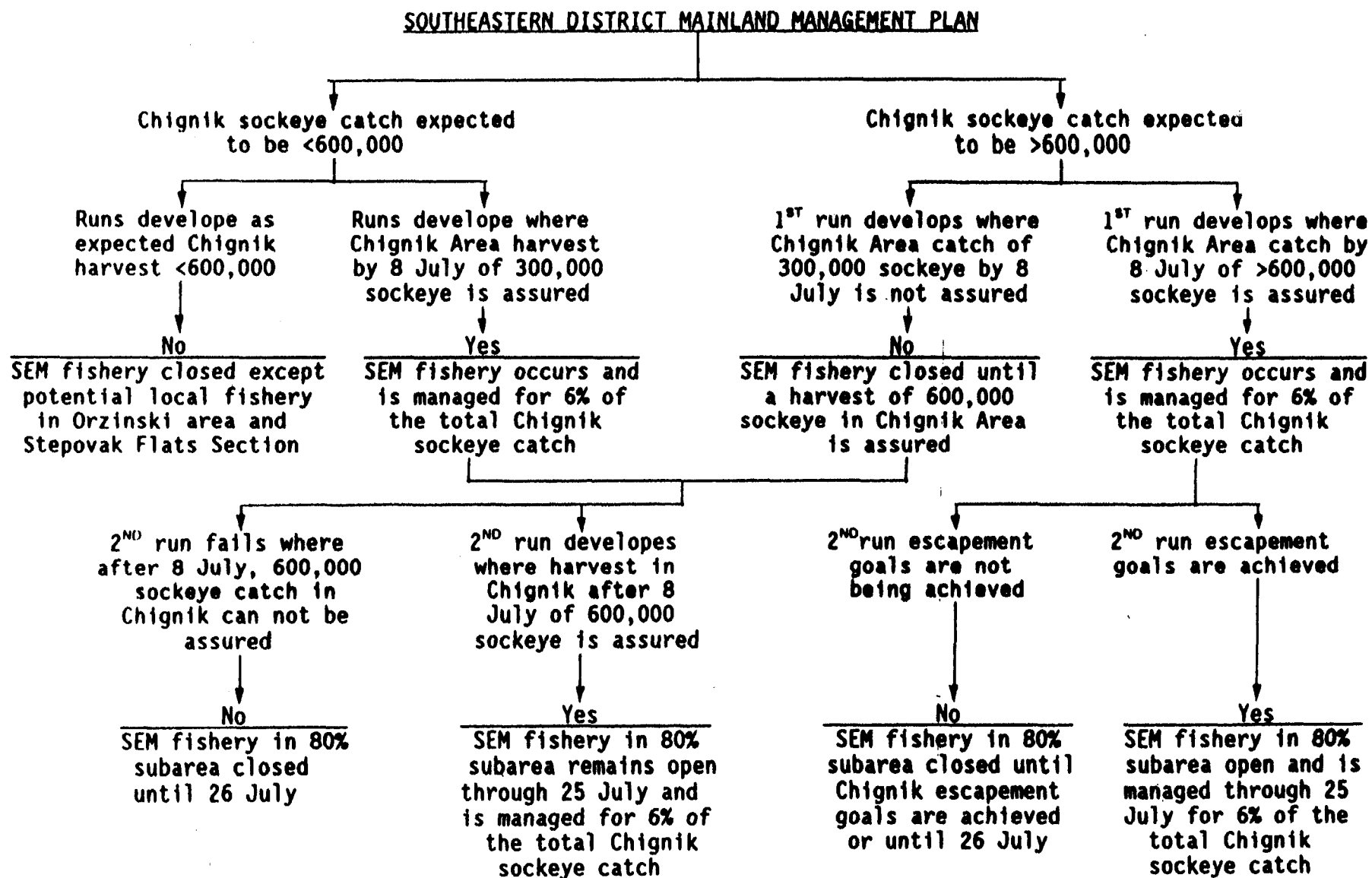


Figure 3: Set gill net effort and harvest level in the Southeastern District Mainland fishery, 1973-1991.

Figure 4. Flow chart of the Southeastern District Mainland (SEM) salmon management plan.



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